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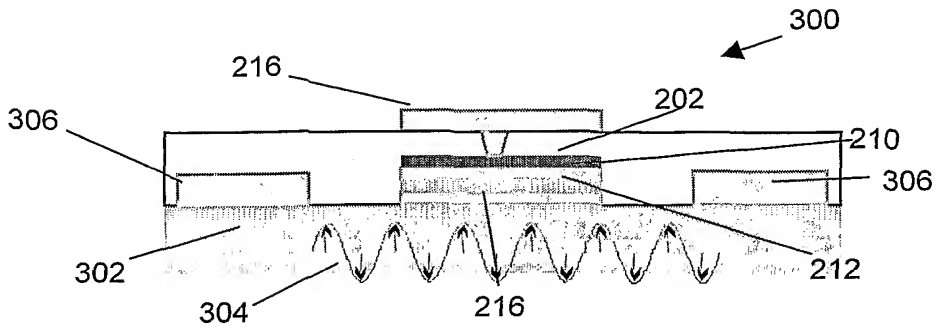
(54) Title: FULLY INTEGRATED TUNEABLE SPIN TORQUE DEVICE FOR GENERATING AN OSCILLATING SIGNAL AND METHOD FOR TUNING SUCH APPARATUS



(57) Abstract: The present invention is related to a a device and corresponding methods for generating an oscillating signal. The device comprises a means for providing a current of spin polarised charge carriers, a magnetic, e.g. ferromagnetic, excitable layer adapted for receiving the generated current of spin polarised charge carriers thus generating an oscillating signal with a frequency v_{osc} and an integrated means for interacting with said magnetic, e.g. ferromagnetic, excitable layer such that a selection of said oscillation frequency is achieved. No external field needs to be applied to select or tune the frequency. Different types of integrated means can be used, such as e.g. means inducing mechanical stress in the magnetic, e.g. ferromagnetic, excitable layer, means inducing exchange bias interactions and means inducing magnetostatic interactions.

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